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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/542,439	02/13/2006	Jamil A Siddiqui	180577-00730	2787

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SABIC AMERICAS, INC.  
1600 INDUSTRIAL BLVD.  
SUGAR LAND, TX 77478

EXAMINER
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NGUYEN, COLETTE B

ART UNIT	PAPER NUMBER
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1793

MAIL DATE	DELIVERY MODE
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08/18/2009

PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/542,439	<b>Applicant(s)</b> SIDDIQUI ET AL.	
	<b>Examiner</b> COLETTE NGUYEN	<b>Art Unit</b> 1793	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 06 July 2009.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 4-14 and 17-23 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 4-14 and 17-23 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)            | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)   | Paper No(s)/Mail Date. _____                                      |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____  | 6) <input type="checkbox"/> Other: _____                          |

## **DETAILED ACTION**

### ***Continued Examination Under 37 CFR 1.114***

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on June 22<sup>nd</sup>, 2009 has been entered.

### ***Status of the application***

*Claim 1-3, 15,16 canceled. Claim 4 amended. Claims 22,23 new.*

Claim 4-14 and 17-23 are presented for examination.

### ***Specification***

1. The examiner has not checked the specification to the extent necessary to determine the presence of all possible minor errors (grammatical, typographical and idiomatic). Cooperation of the applicant(s) is requested in correcting any errors of which applicant(s) may become aware of in the specification, in the claims and in any future amendment(s) that applicant(s) may file. Applicant(s) is also requested to complete the status of any copending applications referred to in the specification by their Attorney

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Docket Number or Application Serial Number, if any. The status of the parent application(s) and/or any other application(s) cross- referenced to this application, if any, should be updated in a timely manner.

2. The specification is objected to as there are two conflicting conditions on page 3 and 5 wherein the polymeric titanium glycolate formula has  $n = 1$  on page 3 and  $n = 0$  on page 5. Correction is respectfully requested

### ***Claim Rejections - 35 USC § 103***

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

2. Claims 4-14 and 17-23 are rejected under 35 U.S.C. 103(a) as being unpatentable over Putzig et al.(US6,066,714) in view of Sublett (US5,017,680) and Braune(US5,610,231)
3. Regarding claim 4. Putzig (714) teaches process (either DMT, Dimethyl terephthalate or TPA, terephthalic acid ) for the esterification of a dicarboxylic acid compound, having about 2 to 30 carbons, linear or branched, and an alcohol (Col 6, In 10-50) with a novel catalyst composition which is substantially soluble, efficient and the produced polymer has reduced color. The catalyst comprises : an organic titanium compound of any two of more of a general formula  $[Ti(OR)_4]_n$ , so n is 2 or more (Col 2, In 15-48); the claim has n is up to 200. It would have been obvious for one of ordinary skill in the art at the time of the invention to experiment with the formula and come up with an optimum polymeric of 200 by optimization. And optimization is a prima facie case of obviousness. In addition, a phosphorous compound, a tertiary amine and optionally a cocatalyst are also comprised (col 1, In 60-65). He does not specify

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titanium glycolate as organic titanium and alkali metal glycolate. Or the mole ratio of titanium glycolate and the alkali metal glycolate. Sublett (680) discloses a complex catalyst inhibitor for the production of synthetic polyesters with fast polycondensation rate and reduced acetaldehyde. The catalyst complex comprises a titanium/alkali metal or alkaline earth metal complex such as titanium glycolate (Col 5, ln 14) with an alkali or alkali earth metal salt such as sodium glycoxide. (Col5, ln 18-30). The mole ratio of the alkali metal/titanium is 0.25/1. (Col3, ln 50-55) which is equivalent to a mole ratio of 4: 1 of titanium/ alkali metal. The claim is 1.25:1 to 100:1. Alkali metal glycolate is not mentioned. Braune (231), in his invention for preparation of thermoplastic polyesters, suggests that alkali metal salts that can be used for esterification also include sodium glycolate (col. 2, ln 43) thus obvious use as an alkali metal salt broadly suggested by Sublett. Notice that some of the same salts (acetate, carbonate, succinate) overlap in Sublett and Braune thus even more suggestion that all of these are alternatives salts that can be use. It would have been obvious for one of ordinary skill in the art at the time of the invention to substitute Putzig's catalyst with Sublett's catalyst to obtain whiteness and no acetaldehyde smell by using an alkaline metal salt and Braune to use specifically the alkaline glycolate to have a speck-free and gel -free products and a shorter polycondensation time overall.

3. Regarding claims 5, 6, 7. Putzig in view of Sublett and Braune disclose a process of claim 4, wherein R contains 4 to 15 carbons, such terephthalic acid, isophthalic acid, naphthalic acid, succinic acid, adipic acid, glutaric acid, oxalic acid and maleic acid. (col 6, ln 35-45)

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4. Regarding claim 8. Putzig teaches esterification process using an alcohol and an oligomer having repeating units derived from an organic acid or ester such as carboxylic acid (Col 6, line 15).
5. Regarding claim 9, 10, 17 .Putzig discloses the alcohol of the formula HO-R-OH or HO-[R-O]<sub>n</sub> wherein R is an alkyl group having 1 to about 12 carbons such as ethylene glycol, butylene glycol, 1-methyl propylene glycol , pentylene glycol and combinations thereof. (Col6, ln 50-67).
6. Regarding Claims 11, 12, 13. Putzig specifically teaches a process temperature of 250-300C under a pressure of 0.001 to about 10 atmospheres, with a molar ratio of the alcohol to the carbonyl compound of 1:1 to 10:1. The teachings encompass the instant claims (Col 7, line 22-35).
7. Regarding Claim 14 and 19, 20 21. Sublett specifically teaches a concentration of about 10-100ppm prior to addition to the reaction mixture or in situ i.e., in the process feed (Col 5, line11). The concentration of the catalyst revealed by Sublett encompasses the concentration of the instant claims.
8. Regarding claim 18. It is rejected as Putzig specifically teaches a ratio of 1:1 to about 3:1 of alcohol to dicarboxylic compound (Col 7, line33).
9. Regarding claims 22, 23. In Col 7, ln 68, Sublett discloses a metal/titanium metal ratio of 15 to 110ppm and a formula to calculate the content of the metal in the catalyst. He does not specify the total content of metals, however from the disclosed ratio and the formula it would have been obvious for one of ordinary skill in the art at

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the time of the invention to use the formula and calculate the content of metals in the catalyst and come up with a value as shown.

### ***Response to Arguments***

2. Applicant's arguments filed July 06, 2009 have been fully considered but they are not persuasive.

3. The argument about combining Sublett's teaching with Putzig's teaching: In response to applicant's argument that there is no suggestion to combine the references, the examiner recognizes that obviousness can only be established by combining or modifying the teachings of the prior art to produce the claimed invention where there is some teaching, suggestion, or motivation to do so found either in the references themselves or in the knowledge generally available to one of ordinary skill in the art. See *In re Fine*, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988) and *In re Jones*, 958 F.2d 347, 21 USPQ2d 1941 (Fed. Cir. 1992). In this case, Putzig clearly teaches esterification and transesterification to make polyester with a catalyst complex comprising titanium compound by either DMT or TPA route. Sublett teaches esterification with also catalyst complex comprising titanium. Both have same objective. So it would have been obvious for one of ordinary skill in the art at the time of the invention to experiment and optimize both teachings and claim differences otherwise all the teachings are obvious. The rationale to modify or combine the prior art does not have to be expressly stated in the prior art; the rationale may be expressly or impliedly contained in the prior art or it may be reasoned from knowledge generally available to

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one of ordinary skill in the art, established scientific principles, or legal precedent established by prior case law. *In re Fine*, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988); *In re Jones*, 958 F.2d 347, 21 USPQ2d 1941 (Fed. Cir. 1992). See also *In re Kotzab*, 217 F.3d 1365, 1370, 55 USPQ2d 1313, 1317 (Fed. Cir. 2000) (setting forth test for implicit teachings); *In re Eli Lilly & Co.*, 902 F.2d 943, 14 USPQ2d 1741 (Fed. Cir. 1990) (discussion of reliance on legal precedent); *In re Nilssen*, 851 F.2d 1401, 1403, 7 USPQ 2d 1500, 1502 (Fed Cir., 1988) (references do not have to explicitly suggest combining teachings); *Ex parte Clapp*, 227 USPQ 972 (Bd. Pat App & Inter. 1985) (examiner must present convincing line of reasoning supporting rejection); and *Ex parte Levengood*, 28 USPQ2d 1300 (Bd. Pat App & Inter. 1993) (reliance on logic and sound scientific reasoning).

3. About the declaration under 37 CFR 1.132. If example 10 and 10a demonstrate that a molar ratio of the polymeric titanium glycolate and the alkali metal glycolate between 1.25:1 to 100:1 has improved results over a molar ratio of 1:1. The examples 3 and 4 show otherwise. Example 3 has a mole ratio of Ti/Na 2:1 with L = 81. Example 4 has a mole ratio of Ti/Na of 10:1 with L = 80.5. If the claim is correct then example 4 should have a L value higher than 81, in this case it is on 80.5. Furthermore, mole ratio is mole ratio; it has nothing to do with ppm. The argument is not persuasive.

About the argument that the claim teaches TPA route instead of DMT route. Putzig clearly shows in the examples that both TPA and DMT routes can be used with the process that he discloses.

### ***Conclusion***

4. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. US3,962,1289 and JP71041025.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to COLETTE NGUYEN whose telephone number is (571)270-5831. The examiner can normally be reached on Monday-Thursday, 10:00-4:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Curt Mayes can be reached on (571)-272-1234. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/COLETTE NGUYEN/  
Examiner, Art Unit 1793

August 7, 2009

/Melvin Curtis Mayes/  
Supervisory Patent Examiner, Art Unit 1793